

TOP SECRET**PRIORITY**

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CORONA

SUBJ: MISSION 1045 PHOTOGRAPHIC EVALUATION INTERIM REPORT (PEIR)

REF: A. [] 9252

B. [] 9312

1. NUMERICAL SUMMARY

MSN NO AND DATES:

1045-1, 24-31 JANUARY 1968

1045-2, 31 JANUARY - 7 FEBRUARY 1968

LAUNCH DATE AND TIME:

24 JANUARY 1968/2226Z

VEHICLE NUMBER:

1640

CAMERA SYSTEM:

J-45 (PG-7)

PAN CAMERA NO:

FORWARD-LOOKING, 214

AFT-LOOKING, 215

D109/137/138

D108/139/141

MSN 1045-1, S/I NO:

MSN 1045-1, 112

MSN 1045-2, S/I NO:

MSN 1045-2, 223

RECOVERY REVS:

2. CAMERA SETTINGS

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FWD-LOOKING

0.225 INCH SLIT, WRITTEN 23A

AFT-LOOKING

0.175 INCH SLIT, WRITTEN 21

3. PERFORMANCE SUMMARY

THIS MISSION PROVIDED A NEAR TROUBLE FREE PERFORMANCE OF THE CORONA CAMERA SERIES. THE PHOTOINTERPRETERS AND THE PET CONSIDER THE BEST QUALITY PHOTOGRAPHY OF MISSION 1045 TO BE COMPARABLE TO THE BEST EVER ATTAINED BY THE J-1 CAMERA SYSTEM. HOWEVER, AS USUAL, THE OVERALL QUALITY IS VARIABLE IN ASSOCIATION WITH ATMOSPHERIC ATTENUATION AND SOLAR POSITION.

4. ANOMALIES: THE PROBLEMS REPORTED WERE GENERALLY OF A CHARACTERISTIC NATURE.

A. ANOMALY: THE FIDUCIALS WERE MISSING FROM BOTH FORWARD CAMERA H. O. FORMATS FOR A SHORT SEGMENT OF THE FIRST MISSION. THE ANOMALY OCCURRED ON THE THIRD FRAME OF THE LAST OPERATION ON REV 8 AND ENDED 11 FRAMES LATER ON THE THIRD FRAME OF THE FIRST OPERATION ON REV 9. THIS ANOMALY DID NOT HINDER PRODUCT INTERPRETATION OTHER THAN IN THE AFFLICTED AREA.

CAUSE: UNKNOWN.

ACTION: DETERMINE POSSIBLE CAUSES (MONITORS: [])

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B. ANOMALY: VERY SLIGHT VEILING ON THE AFT STARBOARD HORIZON THROUGHOUT THE FIRST MISSION, SIMILAR TO 1044. THE HORIZON IS STILL WELL DEFINED, AND VEILING DOES NOT HINDER DATA REDUCTION.

CAUSE: THIS PHENOMENON HAS BEEN OBSERVED ON PREVIOUS

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SYSTEMS; INVESTIGATION HAS FAILED TO ESTABLISH A DEFINITE CAUSE.

ACTION: NO NEW ACTION AT THIS TIME.

C. ANOMALY: APPROXIMATELY 11 INDEX AND 23 STELLAR FRAMES ARE MISSING FROM THE END OF 1045-1. THE LAST RECOVERED PHOTOGRAPHY WAS CUT IN MID-FRAME.

CAUSE: THE APPARENT CAUSE OF THIS ANOMALY WAS EITHER LACK OF SLEW SIGNAL OR FAILURE OF THE S/I UNIT TO RESPOND TO THAT SIGNAL. NO EVIDENCE OF THE BACKUP CUTTER ACTION WAS NOTED; THE CUT WAS MADE BY THE WATERSEAL. NO T/M DATA ARE AVAILABLE DUE TO LINK ONE FAILURE.

ACTION: INVESTIGATE POSSIBLE FAILURE MODES (MONITORS: [REDACTED])

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D. ANOMALY: THE LENS PG TRACES WERE INOPERATIVE ON PORTIONS OF SOME PROGRAMMED Z.I. PASSES.

CAUSE: UNKNOWN. FOR ONE PASS BOTH CAMERAS OPERATED

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PROPERLY. ON THE ADDITIONAL PASSES, ONLY THE FWD CAMERA CONTINUED TO RESPOND PROPERLY. THE AFT CAMERA TRACES FOR THESE ADDITIONAL PASSES DISAPPEARED AFTER 2-3 CYCLES OF OPERATION.

ACTION: NO ACTION TO BE TAKEN PENDING A DECISION ON QUESTION OF CONTINUED USE OF PG CAPABILITY FOR FUTURE J-1 FLIGHTS.

E. ANOMALY: LIGHT BANDING OCCURS INTERMITTENTLY NEAR THE SCAN START END OF SOME FRAMES.

CAUSE: THE BANDING IS APPARENTLY CAUSED BY IRREGULAR SCAN ARM MOTION NEAR SCAN START; NO IMAGE SMEAR WAS APPARENT IN THE Banded REGIONS. TENDENCY TOWARDS BANDING WAS OBSERVED DURING PREFLIGHT TESTING, BUT WAIVER RECOMMENDED BECAUSE OF APPARENT MINOR EFFECT, BANDING IS MORE PREDOMINANT IN PG SYSTEMS BECAUSE OF MECHANISM BALANCE AND TIMING CHARACTERISTIC.

ACTION: NONE. MINOR BANDING IS CHARACTERISTIC OF INSTRUMENT OPERATION.

F. ANOMALY: THE FIRST SEGMENT OF 1045-2 STELLAR RECORD PRESENTS AN ANOMALISTIC APPEARANCE. TITLED FRAME 001 APPEARS NORMAL. FRAMES 002 THRU 006 APPEAR DENSE, WITH EVIDENCE OF OPEN SHUTTER DURING

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TRANSPORT; THE RESEAU WAS SHARPLY IMAGED BETWEEN FRAMES. IMMEDIATELY PRIOR TO FRAME 001 ARE SEVEN VERY DENSE EXPOSURES. STELLAR FRAME 001 CORRESPONDS TO INDEX FRAME 001, THE FIRST FRAME OF PASS D104.

CAUSE: UNKNOWN.

ACTION: DETERMINE PROBABLE CAUSES. (MONITOR: [REDACTED])

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5. COMMENTS

A. THE IMPROVED PHOTOGRAPHY (MIP-90) IS ATTRIBUTED PRIMARILY TO THE ADJUSTED CAMERA FOCAL POSITION AND TO FAVORABLE WEATHER CONDITIONS.

B. THE AFT-LOOKING CAMERA PRODUCED THE BETTER IMAGERY WITH CORN TARGET RESOLUTION OF [REDACTED] THE FORWARD CAMERA IMAGERY IS MORE TYPICAL OF PAST J-1 SYSTEM PERFORMANCE, WITH RESOLU-

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TION [REDACTED]

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C. UNDER HIGH MAGNIFICATION (100X), MINOR SMEAR IN THE FMC DIRECTION IS DETECTABLE IN THE FORWARD RECORD. IN ONE INSTANCE, SWEEP-WING AIRCRAFT ON A FLIGHT LINE LOST THE WING TAPER ON THE FORWARD IMAGERY.

D. MISSION 1045 (CAMERA SYSTEM J-45) WAS A PG (PAN GEOMETRY) SYSTEM. AS FAR AS THE PET CAN ASSESS, THE PG ASPECTS OF THE J-1 SYSTEM ARE NOT GOING TO BE USED BY THE COMMUNITY. IF THIS IS SO,

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WE WOULD RECOMMEND THAT ALL PG ASPECTS OF THE REMAINING TWO PG J-1 CAMERAS BE DISABLED. DOING SO WOULD EASE THE TITLING PROBLEMS AT [REDACTED] AS PG SYSTEMS REQUIRE BETWEEN FRAME TITLING WHICH IS MORE TIME CONSUMING THAN THE NORMAL EDGE TITLING. REACTION FROM THE COMMUNITY ON THIS QUESTION IS DESIRED. IT IS RECOMMENDED THAT REPRESENTATIVES FROM THE COMMUNITY BE PREPARED TO DISCUSS THIS QUESTION AT THE APRIL PIM MEETING.

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END OF MESSAGE